FIRMWARE STRUCTURING METHOD AND RELATED APPARATUS FOR UNIFYING HANDLING OF EXECUTION RESPONSES OF SUBROUTINES

Abstract

A firmware code structuring method and related apparatus includes a plurality of subroutines to define various operations of the hardware circuit, and the subroutines are grouped in several different levels. A subroutine of a lower level defines a simpler operation of the hardware circuit, and a higher-level subroutine calls a plurality of lower level subroutines to define more complicated operations of the hardware circuit. When the lower level subroutines are executed, they store results of corresponding operations in an error code. If certain operations performed do not achieve expected results, a corresponding recovery operation is performed by the hardware circuit. To control the hardware to perform the required recovery operations, an error-handler is executed to make the hardware circuit perform recovery operations corresponding to lower level subroutines called in a higher level

subroutine according to the error code after the higher level sub-

routine is finished.